

Application No: 10/037,258

REMARKS

Claim Rejection under 35 U.S.C. § 103

Claims 1-5 and 7-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Drummond. Claim Rejections under 35 C.F.R. § 103

Specifically it was said that Miller teaches independent control of pumping and timing and Drummond teaches the use of a control chamber which is always open to a drain, but has high pressure selectively going into it to control injection timing. (See the previous office action of 01/23/2004). Applicant respectfully traverses this rejection.

In order for a claimed invention to be rendered obvious in view of a given reference or combination of references, there must be some suggestion or motivation, in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or combine reference teachings. MPEP § 2143. It has been conceded that U.S. Patent No. 3,168,209 to Brookins et al. ("Brookins et al."), which is the only reference upon which this rejection is based, does not teach or suggest all claim limitations contained in the independent or dependent claims.

With respect to independent claims 1 and 11, Miller does not teach or suggest that the needle valve is shiftably disposed in a bore defined in a unitary, fixed, non-shiftable housing. In fact, the injector according to Miller clearly includes two separate concentric components, an outer moveable valve element 96 and a lower barrel 102. The check 30 is shiftably disposed in a bore defined in the lower barrel 102. This is in distinction to the prior art noted in Miller that has a needle valve is shiftably disposed in a bore defined in a unitary, fixed, non-shiftable housing.

The injector of Drummond is simply the housing with a needle valve disposed therein. There is no suggestion, teaching or structure in Drummond for including a means for elevating the pressure of the fuel to an injectable level in the injector itself. Nor is there suggestion, teaching or structure in Drummond for including the timing control valve in the injector itself.

The prior art injector noted in Miller has certain desirable features in avoiding a high pressure common fuel rail. The common rail injector of Drummond has certain desirable features in the timing control of injection. The combination of the control features of Drummond with unit injector of the Miller prior art is unique. The mere fact that a reference can be modified

Application No: 10/037,258

does not render the result obvious unless the reference suggests the modification. In re Mills, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990); MPEP § 2143.01. Miller does not make any suggestion that the needle valve can shiftably disposed in a bore defined in a unitary, fixed, non-shiftable housing., but rather every embodiment suggests otherwise. Further, Drummond does not make any suggestion for including a means for elevating the pressure of the fuel to an injectable level in the injector itself. Accordingly, the Applicant does not believe that a prima facie case of obviousness has been established.

For the foregoing reasons, it would not have been obvious to one of ordinary skill in the art to make an injector as defined in claims 1 and 11. With respect to the dependent claims, Applicant submits that the cited claims depend from independent claims that have been demonstrated to be unobvious over Miller. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claims depending therefrom is nonobvious. In re Fine, 5 USPQ2d 1596 (Fed. Cir. 1988); MPEP § 2143.03.

As such, Applicant respectfully requests that the Examiner withdraw this rejection with respect to claims 1-5 and 7-14.

Claim 6 was rejected und 35 USC 103(a) as being unpatentable over Miller and Drummond as applied with regard to Claims 1-5 above, and further in view of Ishida

Like Drummond, Ishida is a pressure storage (common rail) fuel injection system. There is no suggestion, teaching or structure in Ishida for including a means for elevating the pressure of the fuel to an injectable level in the injector itself. Ishida is limited to a common rail system. The arguments made with respect to miller and Drummond above therefore also apply to Miller and Drummond in combination with Ishida.

Application No: 10/037,258

CONCLUSION

Claims 1-14 are pending. By this Amendment, claims 1 and 11, the independent claims, are amended.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes that such communication would be useful to advance prosecution.

Respectfully submitted,



John F. Thuent
Registration No. 29,595

Customer No. 24113
Patterson, Thuent, Skar & Christensen, P.A.
4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100
Telephone: (612) 349-5747